



AssetWise APM Asset Health Monitoring

The Right Work on the Right Equipment at the Right Time

Ensure a safe, reliable, and compliant operation. AssetWise APM Asset Health Monitoring provides a cohesive and integrated approach to develop, implement, and manage a living program to manage asset performance, integrity and reliability. Certified and integrated with SAP EAM, IBM Maximo and Oracle eAM Enterprise Asset Management systems to trigger the right work on the right equipment at the right time.

AssetWise APM Supports and Drives a Proactive Asset Performance Management Process

AssetWise APM Asset Health Monitoring is an asset condition monitoring and data consolidation platform. APM enables you to efficiently and effectively collect, consolidate and centrally store, analyze and act on data to make timely and informed maintenance decisions. Mitigate risk and the consequences of failure while at the same time, lowering costs.

Bentley uniquely enables a reliability-centered approach earlier in the lifecycle to ensure operational readiness and optimal performance. Once in operation, detect the onset of failure early so you can make timely and informed maintenance decisions before equipment fails. AssetWise APM provides a unique combination of rigor, speed, and risk-sensitivity to develop a cohesive strategy across an entire equipment base. The asset health dashboard drives a proactive daily process. It changes the way operations, engineering and maintenance work together to manage production assets. AssetWise APM becomes the 'control room' or pulse of the operation as it relates to asset health, recommending what actions to take and when to prevent asset failure. APM links directly back to the asset strategy and program to understand why actions are to be taken and to continuously improve the living program.

Immersive APM

Bentley's approach to visual operations reduces the gap between the engineer's mental model of the plant, its performance and its representation in IT systems. By leveraging Bentley's industry leading asset performance management capabilities, its federated approach to information management combined with its 30-year investment in design and engineering technologies, Bentley is able to link 2D and 3D representations of a unit/plant/site with data from other operational systems to support common asset performance and integrity management process workflows.

Achieve quick results and build momentum and support in your journey to operational excellence. Use handheld data collectors to standardize inspection indicator readings. For situations where assets are spread across a wide geographic area, a subset of AssetWise APM, APM Remote allows users to work disconnected from



Monitor degradation of asset condition and view potential failures and corrective actions taken.

the network for extended periods of time. Users have direct access to the information required for the tasks they need to perform their jobs. When used in conjunction with SAP EAM or any other EAM system, APM Remote provides visibility to the asset hierarchy, work and asset health history with the ability to create corrective work orders while in the field.

Eliminating Islands of Data

The data needed to improve equipment performance and reliability exists in many disparate databases. Each has useful data, but is not available in a central repository where it could be automatically analyzed as part of a program and turned into actionable information instantly. AssetWise APM doesn't just store data, it evaluates all condition data from all sources, leading to alarming and trending of data as well as recommendations or automatic creation of corrective actions to take (in the EAM CMMS).

Benefits

- Reduce risk and ensure safety
- Ensure predictable production
- Eliminate unexpected downtime
- Increase availability and asset utilization
- Reduce costs
- Ensure compliance with standards and regulations
- Meet quality targets
- Eliminate islands of data
- Capture the knowledge of a retiring workforce

System Requirements

Deployment Options

- Smart client three tier (LAN or WAN)
- Stand alone
- Client-server (LAN)
- Citrix/Terminal Services (WAN)

Databases Supported

- Microsoft SQL Server and Oracle

Technical Architecture

- Microsoft.Net
- Winforms user interface components
- Load balancing, application server management, hosted under IIS
- Unified deployment and migration tools
- Source code: C++ (business objects), C# (user interface)
- Open database connectivity using Microsoft ODBC and ADO.net

Integrations

- Standard certified integrations to SAP EAM, IBM Maximo, and Oracle EAM, Isograph Availability Workbench

SAP® Certified
Powered by SAP NetWeaver®

IBM maximo™

Find out about Bentley at: www.bentley.com

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AssetWise APM Asset Health Monitoring At-A-Glance

Asset Hierarchy

- Manage high volumes of assets from multiple sites with unlimited hierarchy levels
- Spatially navigate assets (display assets and any indicators in alarm in a geographical map)
- View visual representation (2D/3D) of an asset in the hierarchy
- Track to level required to monitor condition indicators
- Quickly identify poor performers out of very large asset populations

Support for i-models

- Secure, portable, and self-describing containers for complex asset data can be displayed in the hierarchy
- Link condition indicators to this visual (2D or 3D) representation of an asset
- Supports a federated approach, with provenance (audit trail), is portable, self-describing (no need to have the applications that created them to review) and time sensitive

Condition Indicators

- Supports descriptive and numeric indicators
- Apply calculations and rules
- Normal/non-normal states, multiple alarm thresholds (eg. Early Warning, Urgent, Critical, etc.)

Reliability Strategy/Program Implementation

- Ensure newly developed strategies don't get filed away
- Wizard-based route creation
- Quickly identify inspection points for an asset or group of assets, automatically create route per the action plans
- Execute lubrication routes in addition to basic care, preventive maintenance and CBM
- Instructions to user included for each inspection
- Routes may be downloaded to mobile computer

Smart Copy

- Templates to copy indicators to like assets
- Apply a consistent reliability program strategy across sites
- Copies components and assemblies, systems and entire site hierarchies including condition indicators and maintenance plans
- Reduces implementation time and effort

Current Practices Review (CPR)

- Used when quick results are required to initiate change from a highly reactive environment to a more proactive culture
- Validate existing practices
- Automate existing valid paper-based program
- Implement a mobile approach to inspection and work management

Asset Health Dashboard

- One central view of asset health showing flashing alarms in graphical dashboard (in context of asset hierarchy)
- Consolidate and analyze condition data from all sources
- Monitor asset condition trends
- Detect the onset of failure early
- Link directly to individual failure modes

Alarm Management and Triggering of Proactive/Corrective Work

- Make timely and informed maintenance decisions before equipment fails
- Automatic email notification when alarm threshold is exceeded
- Alarm acknowledgement can automatically trigger corrective work in Enterprise Asset Management (EAM) system can suggest corrective work to be performed if indicator is in alarm state

Asset Health Indices

- Leverage condition indicators to quantitatively score and assess overall current asset health from perfect (100%) to poor (0%) for the purpose of long-term capital planning and maintenance work prioritization
- Quickly and easily capture multiple modes of degradation and failure by asset class
- Automatically calculate indices for immediate access and proof of regulatory compliance

Mobile Inspections & Maintenance

- APM Mobile Data Collector standardizes process of collecting qualitative and numeric inspection data
- Create work requests or work orders in the field
- Ensure consistency between inspectors
- Available for wireless connectivity or remote (disconnected for extended periods of time)
- Remote version includes access to asset and work history from the EAM system

APM Dashboard App

- Companion mobile app (Android/Windows 8 and soon IOS)
- At-a-glance view of asset health and key performance indicators (KPIs)
- Respond to alarms and approve work while away from site

Key Performance Indicators

- Ensures accountability at all levels of the organization
- View leading and lagging KPIs and drill down to access details
- KPI templates and personalized dashboards
- My Desk keeps daily work on track

Production Loss Accounting

- Take action to achieve predictable production
- Calculate lost production costs due to plant stoppages and delays
- Focus improvement efforts on the assets with the greatest impact on production

Failure Tracking

- Full, partial, and potential failure tracking
- Track mean time between failures (MTBF)
- Track mean time between repairs (MTBR)

Integration to EAM

- Ensure the right work is being triggered at the right time on the right equipment
- Certified integration with SAP EAM, IBM Maximo, Oracle EAM

Bentley APM Methodology

- Proven APM methodology aligned with ISO 55000 requirements
- Renowned best practices, change management and process maturity model
- Complete education/training program geared towards each level of the organization